GAMING INDUSTRY REPORT

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OUTLINE

About the Gaming Industry

- The video game industry is composed of the creation, development, marketing and monetization of various types of videogames; including but not limited to, PC games, Console games, Virtual Reality (VR) etc.
- The video game industry has gone under massive transitions over the course of its history. Most notably following trends in IT development, the gaming industry has adapted and grown with new technological advancements throughout the years, offering new platforms to game on, new types of games to play and new communities to game with.

Development of gaming platforms throughout the years

In 1970 the first game arcade was created; the arcade videogame scene overtook the young adult community from 1970s to the mid 1980s creating the videogame industry market for this time. The market was dependent on physical gaming machines in one set location on a pay-per-game basis costing anywhere between 10-25 cents per game.

1980s consisted of a shift into the pc gaming world with the release of the Commodore 64. This 8-bit home computer allowed individuals to game at home. This gaming era progressed in accordance with computer technology. Better CPU speeds and adoption of GUI-based operating systems lead to the creation of more pc games.
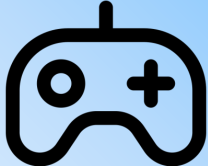
1990s-2005 saw the greatest development of console games with Dreamcast, GameCube, PlayStation 1-3, Xbox, and Wii consoles dominating the market. Gaming grew tremendously in this time as the internet allowed competitive gaming to rise with new and improved consoles being created yearly in accordance with new IT development

Mobile games took the lead in the gaming industry with 1Billion in revenue in 2003, then passing 5 billion in 2007. This sector of the gaming industry is the biggest one today, as the widespread nature of cell phones and the convenience makes this sector grow exponentially and have tremendous potential. As tech advances for our phones this gaming sector does as well

VR gaming began in 2010 with Oculus releasing a VR headset in 2016 specifically for gaming. This market showcases the innovation of the gaming industry with new technology to allow another source of income for this booming industry. This introduced a new platform for gaming, the expense and lack of convenience appeals to a different group of gamers.

Cloud gaming is the most recent era of gaming; Microsoft launched a gaming platform on Azure in 2019 and Google launched Stadia in 2019. This type of gaming runs the game on remote servers and streams to an induvial's device. This sector is growing to be on PC, mobile and console platforms allowing for convenience in multiple sectors in the gaming industry.

Key Players in Gaming Industry
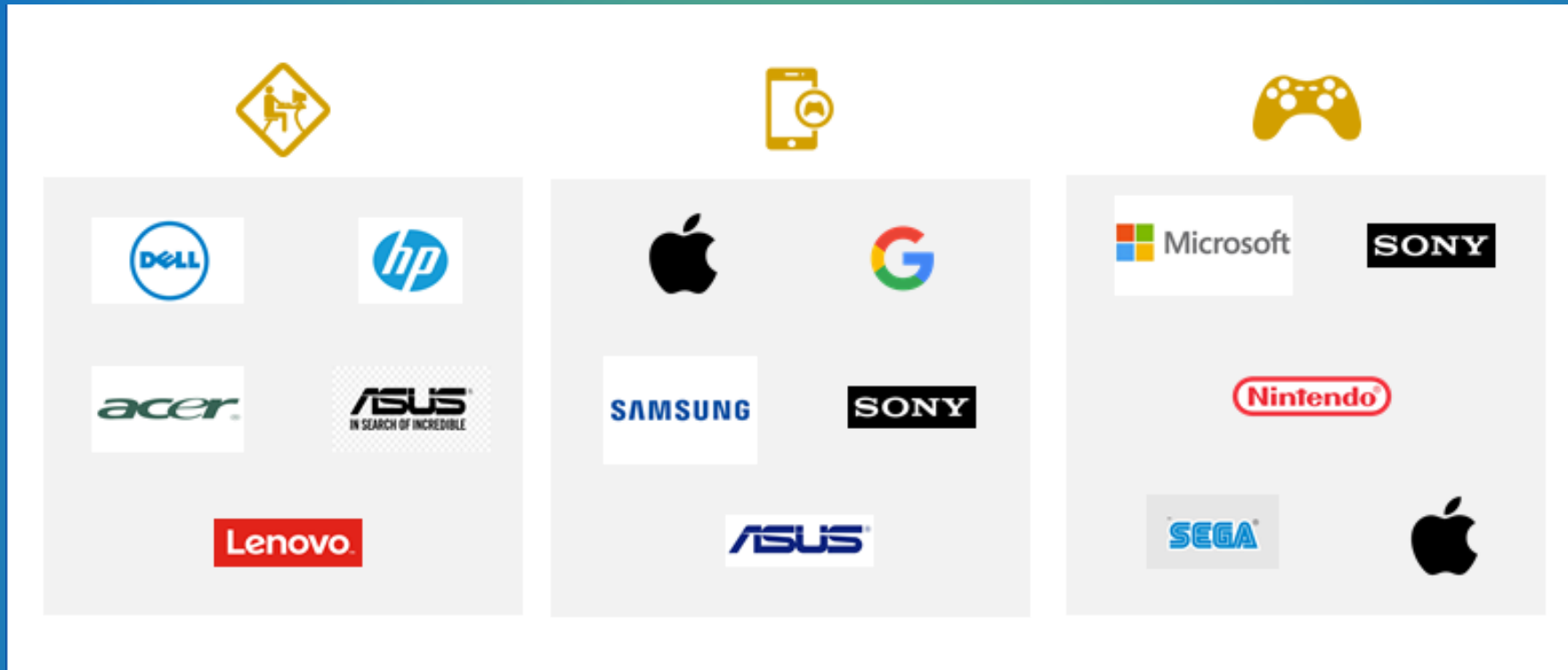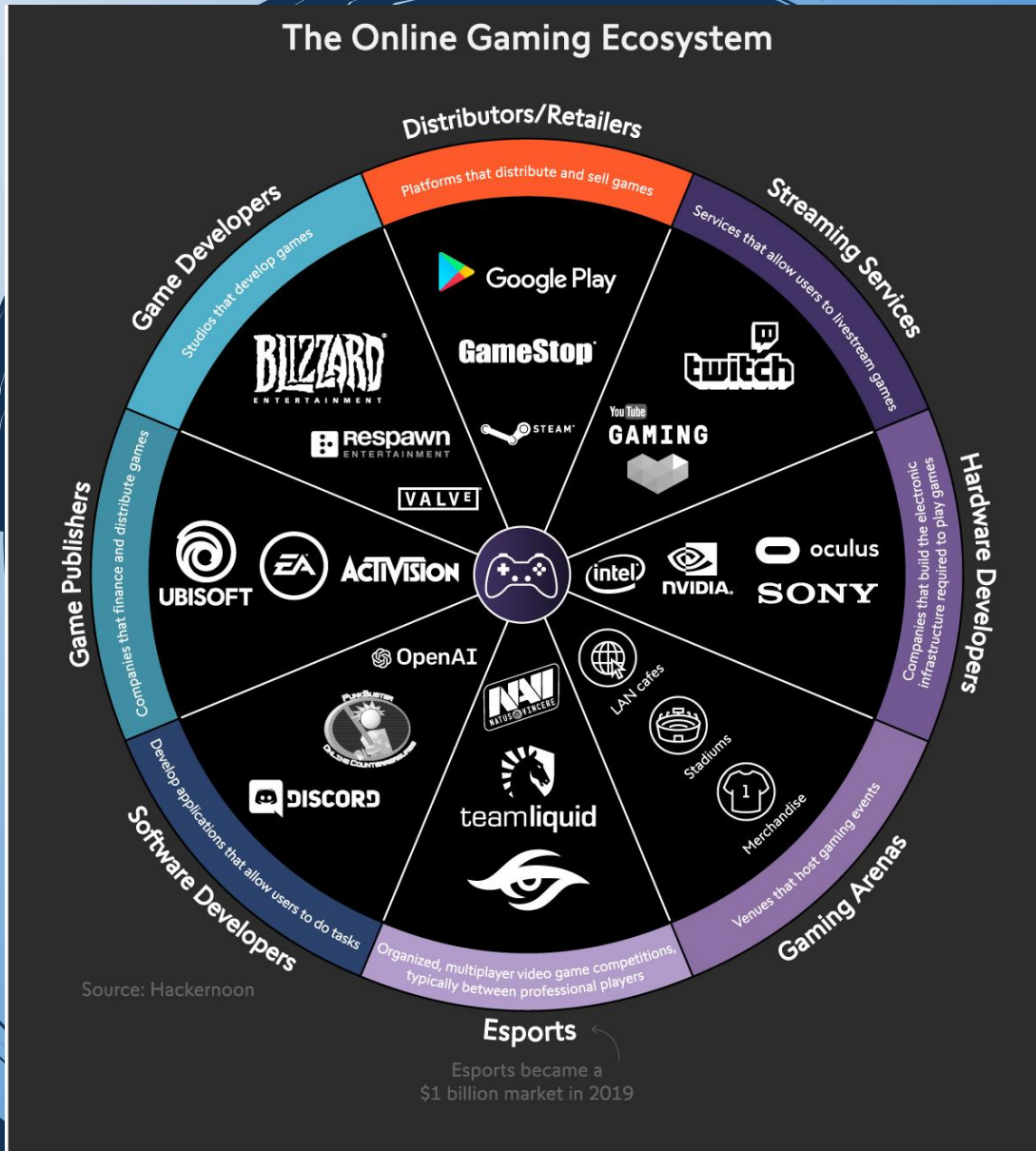
The many different platforms in the Gaming Industry allows for various competitors to dominate certain areas in the market space. This schematic shows some of the current biggest names in the PC gaming, Mobile gaming and Console gaming markets.

The Gaming Industry Ecosystem and Relevant Players:

The Online Gaming Ecosystem

Source: Hackernoon

- The Gaming ecosystem expands greater than just PC, Console and Mobile games. The various stakeholders that make up this market all play a key role into how it grew to the extent that it did, and why the gaming industry will continue to grow.
- The creation of games on all platforms start with the Game developers and Game publishers, then these are sent to distributors and retailers to then be released to the public.
- On the other side, there is the hardware aspect that ties into gaming, as to be able to play these games there needs to be companies creating the hardware that allows users to do so (and more importantly to do so well!).
- Once the public has the games and the means to play them, the ecosystem expands into marketing to the public through players streaming on Twitch or other platforms to promote the game. There are also professional game players called "E-sports" players who foster a community of fans who watch them compete for prizes in gaming arenas.
- This ecosystem creates the value chain for the gaming industry and all parts are a key reason why this market is so big and continues to grow. (Jones, 2021)
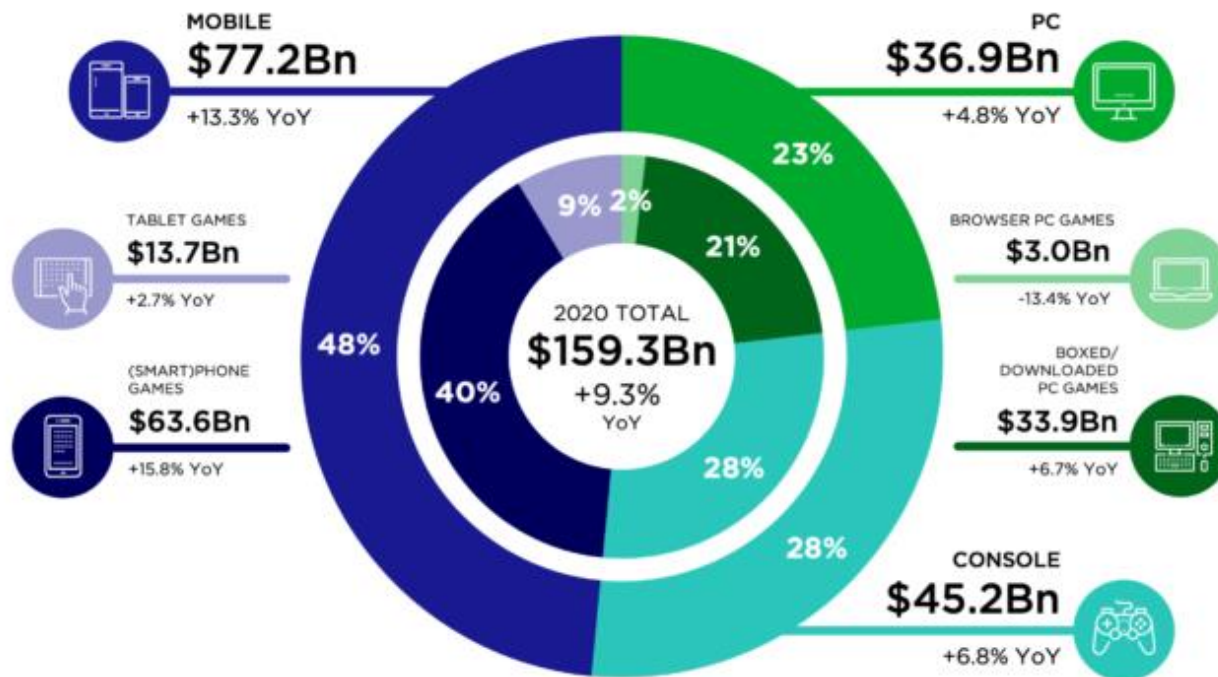
Growing Market

- The gaming industry has shown a steady increase year after year through the innovation of new technologies creating opportunities for more competitors to launch various products in this market. (Vailshery,2010)

- The broad array of consoles used to play video games and the infinite types of games to play on each console allows for a huge consumer base. There is a space in the gaming industry for all types of gamers, whether that be the casual mobile player, to the competitive e-sports pc player, the gaming industry thrives in its ability to reach a vast and ever-growing consumer base.

- The largest spike in the gaming industry came from "the rise of the internet and mobile" that "grew the gaming industry from tens of billions to hundreds of billions" (Wallach, 2021). This spike that started in the early 2000s and has continued to present correlates with the rapidly expanding technological innovations we have seen throughout this time period.

- Key players in the industry can be shown to have flourished in the market during this time in the following ways:
  - PC games rose in quality with the yearly releases of better hardware for computers. NVIDIA, ASUS, Acer etc. all have released new tech in this decade that made the quality of gaming significantly better. Improvements in graphics cards allowed for better visualization of games on PC, better optimized CPUs allowed for games to run smoother and higher quality monitors allowed for gamers to play at the highest framerate with the best pixels for a more immersive experience. (Noon, 2021)
    - The increase in usage of social media and online-multiplayer/competitive games tied into the growth of PC games during these decades, as more players fostered communities with members from all over the world over a shared interest in particular games. In 2009 Minecraft was launched, which "became one of the best-selling games in history with 176 million copies sold." (Jones, 2021)
    - Steam became one of the largest gaming platforms allowing thousands upon thousands of games to be easily accessible to everyone in the PC gaming market. Steam now has over 50,000 games available as of 2021. (Noon, 2021)
  - Mobile games grew tremendously in this era; as the various versions of Samsung and Apple devices got released each year, new games on the app store for each platform were released as well. Angry Birds, Candy Crush and Pokémon go all being influential in this market space and offering their own unique innovation in this market as well; ranging from kid-focused brand building in Angry Birds, in-app monetization from Candy Crush and augmented reality in Pokémon Go. (Smithers, 2020)
  - Console games hit their stride in this era where Nintendo, PlayStation and Xbox are the biggest names in this category, each releasing new and improved consoles every few years with new game titles to go with.

- The global pandemic enticing many to pick up this hobby while they were stuck at home, the gaming market's "revenue reaching $11.6 billion between April and June, a 30% jump year-over-year." where "the PlayStation 4, Xbox One and Nintendo Switch all growing by a minimum of 46% each" (Perez, 2020)

2020 Gaming Industry Market Breakdown

2020 Global Games Market
Per Device & Segment With Year-on-Year Growth Rates

MOBILE **$77.2Bn** +13.3% YoY

TABLET GAMES **$13.7Bn** +2.7% YoY

(SMART)PHONE GAMES **$63.6Bn** +15.8% YoY

PC **$36.9Bn** +4.8% YoY

BROWSER PC GAMES **$3.0Bn** -13.4% YoY

BOXED/ DOWNLOADED PC GAMES **$33.9Bn** +6.7% YoY

CONSOLE **$45.2Bn** +6.8% YoY

2020 TOTAL **$159.3Bn** +9.3% YoY

48% 40% 28% 28% 21% 23% 9% 2%

Source: ©Newzoo | 2020 Global Games Market Report | April Update
newzoo.com/globalgamesreport

This schematic shows the breakdown of the gaming market revenue into the various sectors discussed that make up the gaming industry.

One can see in 2020 the Global Gaming market had 159.3 Billion in total revenue which was a whopping 9.3% year on year growth. Almost half of the market was Mobile games, having a 13.3% year-on-year growth

The effects of the COVID-19 pandemic are apparent in the gaming industry; "The Q4 release of the PlayStation 5 and Xbox Series X|S sealed a year of record-breaking growth. We now estimate that the games market generated $177.8 billion in 2020, up +23.1% year on year, the highest growth for the Market since Newzoo began tracking revenues in 2012." (Wijman, 2021)

Why is this Important?

Information Management is vital to keeping the gaming industry functioning due to the following factors:

- The continuous and projected growth of the gaming industry
  - Including the innate human desire to game
- The expansive and interconnected ecosystem in the creation of software and hardware, the distribution and the public marketing of games.
- The extensive value chain in the industry
- The technological innovation in accordance with this industry

The market is projected to keep growing from here, more recently, "There are more than 2.7 billion gamers worldwide in 2020" (Smithers, 2020)
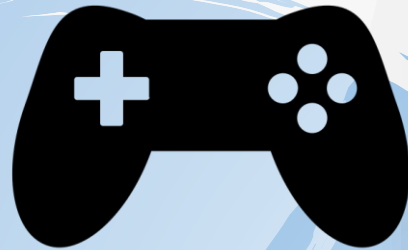
"Games are an Integral part of human culture — but from ancient board games to virtual reality, how we play has changed with times." (Jones, 2021)

RELEVANT ISSUES IN THE GAMING INDUSTRY AND PROPOSED IM SOLUTIONS

Hardware vs Software compatibility and management

Competitive Market and User Retention

Keeping up with new Technologies

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1. Hardware vs Software

- A key issue in the gaming industry comes from the Hardware and Software combability of various games. As well as the user's knowledge around the limitations certain platforms of gaming have in processing games

- Looking at the Value Chain for the gaming industry, the game developers are responsible for creating the game itself and what the specific game is optimizing to appeal to the diverse consumer base that makes up the gaming industry. This could be:
  - High quality graphics. Environmental/landscape focused game where game designers leading this case
  - Mechanically satisfying and challenging where game coders are leading this case

- Both needing to be smooth running to make the most out of the gaming experience for the player, however all parts of the game development process are at the mercy of the hardware available to run their game. The current available hardware must align with the software used to create a specific game to allow for the best user experience. This isn't always easy, and the timing of new consoles and new game development need to be aligned, which creates trouble for both parties in the creation of new games, new hardware and the release of both.

- In addition, having your games run on multiple platforms creates another issue; where your game might have been optimized to run on PC with a strong CPU to allow the game to run smoothly without dropping frames and have monitors with fast response times. Then you take that game and put it on a console such as PlayStation, where the CPU and GPU could be significantly less powerful and now your game doesn't run as well or look as good. This results in consumers experiencing a glitchy or unoptimized game reflecting poorly on the game itself.

- This balance between software and hardware is an ongoing issue in the game industry and is amplified by new IT. The base optimization of a game is always at the mercy of the hardware available at the time creating a relationship between the two that is difficult to maintain.

- Game Devs are constantly having to question what platforms they want their games to run on and find the balance between more platforms so larger consumer base but poorer graphics/performance for some users, or one platform with an optimized game but a smaller consumer base.

Sources: *Tomaselli (2008), BS (2021), Gamefactory (2020), Nemeth (2020)*

Proposed IM solutions

- Creating and managing a flushed-out *redefined* value chain for each individual organization which considers the various platforms of gaming is imperative to solving this issue. An organization should be aware of the changing value chain of this industry due to technological innovation. To fix the issue between game developers and software development of games aligning with hardware development and release dates, and public knowledge of the limitations of various consoles; a value chain organizing the flow of information with one another needs to be put in place and understood by all stakeholders.

- Each sector will still be managing their own tasks, but now the flow of information is clear for all parties, allowing for Game Devs to know what is happening on the hardware side and vice versa; and in addition, the consumers are now being given the information needed to understand what platform their game is on, why it is on that platform, and the specifics on how their game runs.

- This solution prioritizes systems thinking instead of an individual mindset. By addressing the value chain, we are successfully addressing the system as a whole to enable us to identify how our individual parts of the system (different stake holders in the value chain) affect the entirety of the system. This identification will create better information communication across the system and help mitigate this threat to the industry. (Kim, 2016)

Example Gaming Value Chain:

SONY

Source: (Tomaselli, 2020)
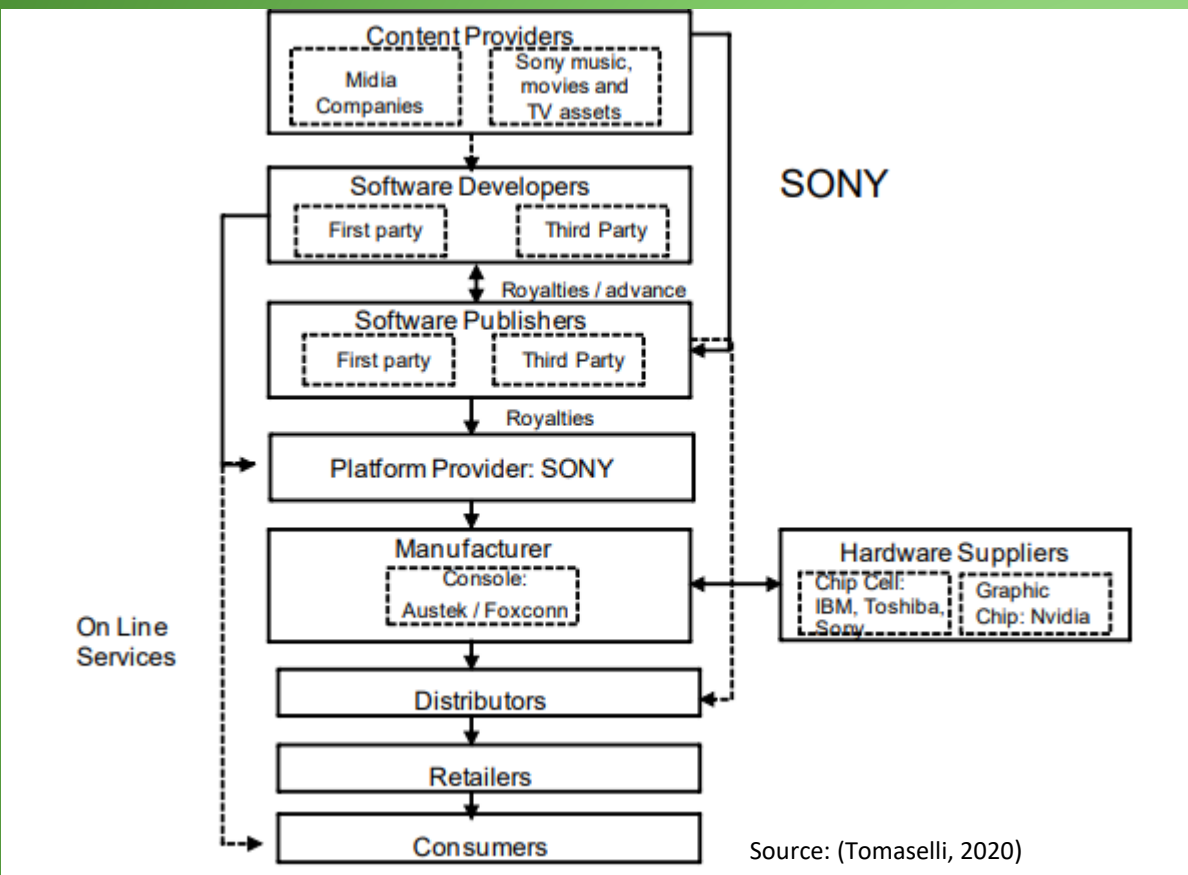
Laying out and communicating a value chain — such as the one created here for SONY — for all stakeholders in the organization would enable better information management and information flow across the system. It would allow for each individual part in the system to now have the proper information to better understand and adapt to other parts of the system to mitigate the risks that come with the inherent trouble of software and hardware combining that is needed in the creation, manufacturing and distribution in the gaming industry.

2. Competitive Market and User Retention

As it has been proven in this report thus far, the gaming industry is ginormous and only continues to get bigger year after year. This presents opportunity in this market that many are trying to take advantage of which can cause big risks to various players in the industry and surprisingly the industry as a whole

- The vastness of the gaming Industry and opportunities for new organizations to take part in this market space is an inherent risk to the gaming industry. Many new gamers are overwhelmed by the vastness of game selections, gaming genres and gaming platforms. This makes getting new users into this market difficult at times because of the overwhelming number of options and information regarding gaming that new consumers must process all at once.

- In addition, specific games and game studios struggle with user retention; due to the staggering amount of games in the world on the various platforms, it is easy for users to drop a game and switch to a new one and never look back. This makes it difficult for all the organizations in this industry, but most specifically impacting the smaller businesses and game studios attempting to break into this large space, to retain users; which could result in the shut down of their company and therefore reduce the amount of organizations in the gaming industry as a whole.

- This competitiveness in the market has also been seen to put pressure on those working in game studios, with a lot of studios having stressful and harmful environments that their employees work in. This creates a negative work environment and makes employees less motivated to create enjoyable games for the public.

Proposed IM Solutions:

To enable new people to join the gaming environment, information must be processed in a way that is not overwhelming to beginners. Organizations should create their games and websites to be beginner friendly and relay base information first before diving into the details that more experienced gamers would understand. This would remove the barrier to entry for individuals attempting to pick up this hobby while not sacrificing the needs of the more experienced players.

To maintain users in this industry, game studios need to market their games to create a community around the game. This community building entices existing users to stay since they now have personal ties and connections to people in the community surrounding the game in addition to the game itself. Building on this, game studios should constantly release new updates or expansion packs to existing games and market them accordingly to tempt users to continue to come back to their game rather than switch to another one or potentially leave the entire industry.

Organizations in the gaming Industry must prioritize employee health and motivation over short-term organizational success. By creating a healthier environment for employees, the organization will experience greater long-term success as employees will enjoy their organizational tasks, be motivated to create better work for the organization and therefore give the organization better products for consumers. To foster a healthier work environment, organizations need to give realistic deadlines and listen to employee feedback. Managers need to ensure employee motivation is high through various check-ins with all members of the organizational hierarchy and not only the identification of solutions, but also the implementation of these solutions to the organizational culture. Organizations in this industry need to balance this hypercompetitive market with an enjoyable work environment and realistic employee tasks to avoid disheartening work culture and apathetic product development.

The booming gaming industry as a whole affects the solutions of this issue since the competitive market is both a good and harmful aspect in the gaming industry. IM solutions for this problem focus on adaptation techniques rather than mitigation techniques; this enables organizations to retain customers and be able to compete in this competitive market while maintaining a positive work environment.

Solution Broken Down into the 3 Aspects of Information Management
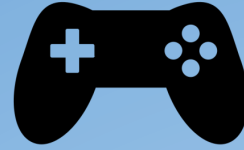
People

New gamers overwhelmed by the scale of the industry

Existing gamers bored and wanting to switch games or hobbies

Employees experiencing stressful/ unenjoyable work conditions

Processes

New users are given an easy-to-understand, gentle and enticing introduction into this hobby

Existing Users are enticed to stay at specific organizations due to game updates and marketed releases of new games fostering an inclusive community and becoming more than just a game

Organizations prioritize employee's health over deadlines. There is communication between parties in the work hierarchy about work environment and conditions to enable

Technology

New users given clear instructions both inside the game and on studio's website

Existing users are given update announcements through media outlets. Games are updated and optimized automatically through the cloud.

Weekly meetings and various in-person check-ins with all organizational members to enable communication about organizational issues, as well as deadlines put in place to implement solutions.

3. Keeping up with new Technologies

New technology is both a blessing and a curse to the gaming industry. It allows for greater innovation, better looking and running games and exciting new platforms for users to experience this hobby on. However, keeping up with new technologies is difficult for many stakeholders in the Gaming industry since they all operate separately from one another, yet rely on each other — as discussed in the hardware vs software sections. This inherently makes it difficult for all aspects of the value chain in the gaming industry to keep up with innovation.

If new hardware comes out that software game developers aren't familiar with creating games for (for example VR or when Xbox released the Kinect with motion controls) there is a lot of time and money spent trying to have these individuals figure out how to create games for this new tech, since "nobody knows how to design a game for it" That means that "the early games [on these new platforms] took a lot more time and money to make with no guarantee that the games were going to turn out to be fun." (Bay,2021)

So, while the software side is losing valuable time and resources, this new hardware doesn't have any games for people to use it for. Hurting the organizations creating the new hardware, the ones creating new games for it and the consumers trying to play new games on exciting new tech and therefore hurting the entirety of the gaming industry. "A high-tech game on the latest high-tech hardware will still be a commercial flop if it's no fun to play." (Bay, 2021)
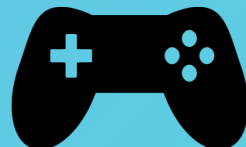
Proposed IM Solutions:

To mitigate this loss of time and money to the software side of the gaming industry and mitigate lost sales to the hardware side, there must be communication between all rungs of the value chain in the gaming environment when new tech is released.

Hardware manufactures should allow game developers to have prototypes of new tech they are working on throughout the creation process, so these game creators are better suited to make games that work well with this innovation. This solution still allows the hardware manufacturers to continue to work on this new technology, but also enables game developers to try it out as it is being created to have a better understanding of what this new technology can enable them to do on the content creation side in the gaming industry; therefore, creating better products for consumers that better reflect why this technology was invented in the first place.

This creates a better flow of information throughout the system as well as enabling new technologies to be used in the gaming industry. This will boost the gaming industry as they are now able to be innovative with this new technology and create games that reflect the reason this new tech was made.

The Future of the Gaming Industry

It is evident the gaming Industry faces severe issues; the competitive and ever-growing market, the implementation of new IT and the communication between various stakeholders in the process of game development and deployment all pose serious threats to the industry. However, the consumer base and year-on-year growth is extraordinary and undeniable; If those in the gaming industry are aware of the issues stated in this report and take the information management steps needed to create better communication in the Industry, then the industry will be able to continue to experience this exponential growth as it has been and will be better adapted to technological advancements. Gaming is innate to human culture, and we can see how new technologies have honed in on this desire us humans have to game and created a flourishing and ever-growing market.

The future of gaming involves new and improve technological advancements with new games to go with. With cloud gaming on the rise "giving gamers the ability to stream games rather than playing on a console," VR organizations announcing "cheaper headset options" or even games having the ability to "generate game content that is customized to fit each players personality and playstyle based on their player data."(Jones, 2021) The gaming industry has lots of more room to grow and lots of individuals ready to go on that journey with it.

The gaming industry will continue to grow with technology and become even greater than it is now due to the ease-of-access to all consumers to take part in it and the enjoyment they get out of gaming. Whether that be competitive-PC-E-sports players to the casual-mobile-Candy Crush gamer or the kid-Angry Bird enthusiast; the Gaming Industry has engrained itself in society as a form of pleasure and entertainment that more and more people are seeking out to take part in.

THANK YOU

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Citations

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